	Application No.	**Applicant(s)**
Notice of Allowability	10/734,037	BIRAN ET AL.
	Examiner	**Art Unit**	
	WILLIAM J. GOODCHILD	2433	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to <u>01/29/2010</u>.

2. ☒ The allowed claim(s) is/are <u>1-3,5-10,12-17 and 19-22</u>.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some*   c) ☐ None of the:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

         3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the
           International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the
    attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

/VIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2445

DETAILED ACTION

Allowable Subject Matter

1.   Claims 1-3, 5-10, 12-17 and 19-22 are allowed.

2.   An examiner's amendment to the record appears below. Should the changes
and/or additions be unacceptable to applicant, an amendment may be filed as provided
by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be
submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview
with Elaine Chi on 11/04/2010.

1. (Currently Amended) A method for delivering of a plurality of RDMA messages, the
method comprising the steps of:
placing each out-of-order RDMA message to a reassembly buffer, wherein each in-
order RDMA message bypasses the reassembly buffer and is sent to an internal data
buffer for direct placement to a destination buffer;
storing information regarding each out-of-order RDMA message on a per TCP hole
basis, wherein a TCP hole is a vacancy created in a TCP stream as a result of an out-
of-order TCP segment, wherein the information stored for RDMA Read messages
includes at least a number of pending RDMA Read Request messages waiting for a

doorbell ring in a connection context on a per TCP hole basis or a number of completed

RDMA Read Response messages on a per TCP hole basis; and

delivering the plurality of RDMA messages in-order, such that the out-of-order RDMA

messages are reassembled in-order in the reassembly buffer, wherein, for RDMA Send

type messages, the delivering includes, for each RDMA Send message of a TCP ~~hold~~

hole, placing a completion queue element (COE), the COE including RDMA Send

message specific information, in a work queue element (WQE) associated with the

respective RDMA Send message and keeping a number of RDMA Send messages in a

connection context on a per TCP hole basis.

9. (Currently Amended) A system for delivering of a plurality of RDMA messages, the

system comprising: a processor; and a memory, further comprising:

a system for placing each out-of-order RDMA message to a reassembly buffer, wherein

each in-order RDMA message bypasses the reassembly buffer and is sent to an

internal data buffer for direct placement to a destination buffer;

a system for storing information regarding each out-of-order RDMA message on a per

TCP hole basis, wherein a TCP hole is a vacancy created in a TCP stream as a result

of an out-of-order TCP segment, wherein the information stored for RDMA Read

messages includes at least a number of pending RDMA Read Request messages

waiting for a doorbell ring in a connection context on a per TCP hole basis or a number

of completed RDMA Read Response messages on a per TCP hole basis; and

a system for delivering the plurality of RDMA messages in-order, such that the out-of-

order RDMA messages are reassembled in-order in the reassembly buffer, wherein, for

RDMA Send type messages, the delivering includes, for each RDMA Send message of

a TCP ~~hold~~ hole, placing a completion queue element (CQE), the CQE including RDMA

Send message specific information, in a work queue element (WQE) associated with

the respective RDMA Send message and keeping a number of RDMA Send messages

in a connection context on a per TCP hole basis.

16. (Currently Amended) A computer program product comprising a tangible computer

useable storage medium having computer readable program code embodied therein for

delivering of a plurality of RDMA messages, the program product comprising:

program code configured to place each out-of-order RDMA message to a reassembly

buffer, wherein each in-order RDMA message bypasses the reassembly buffer and is

sent to an internal data buffer for direct placement to a destination buffer;

program code configured to store information regarding each out-of-order RDMA

message on a per TCP hole basis, wherein a TCP hole is a vacancy created in a TCP

stream as a result of an out-of-order TCP segment, wherein the information stored for

RDMA Read messages includes at least a number of pending RDMA Read Request

messages waiting for a doorbell ring in a connection context on a per TCP hole basis or

a number of completed RDMA Read Response messages on a per TCP hole basis; and

program code configured to deliver the plurality of RDMA messages in-order, such that

the out-of-order RDMA messages are reassembled in-order in the reassembly buffer,

wherein, for RDMA Send type messages, the delivering includes, for each RDMA Send

message of a TCP ~~hold~~ hole, placing a completion queue element (CQE), the CQE

including RDMA Send message specific information, in a work queue element (WQE)

associated with the respective RDMA Send message and keeping a number of RDMA

Send messages in a connection context on a per TCP hole basis.

Conclusion

Examiner's Note: Examiner has cited particular paragraphs / columns and line numbers

in the reference(s) applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are

applied to specific limitations within the individual claim, other passages and figures

may apply as well. It is respectfully requested from the applicant in preparing

responses, to fully consider the references in entirety as potentially teaching all or part

of the claimed invention, as well as the context of the cited passages as taught by the

prior art or relied upon by the examiner.

Should applicant amend the claims of the claimed invention, it is respectfully requested

that applicant clearly indicate the portion(s) of applicant's specification that support the

amended claim language for ascertaining the metes and bounds of applicant's claimed

invention

   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to WILLIAM J. GOODCHILD whose telephone number is
(571)270-1589. The examiner can normally be reached on Monday - Friday / 8:00 AM -
4:00 PM EST.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Vivek Srivastava can be reached on (571) 272-7304. The fax phone
number for the organization where this application or proceeding is assigned is 571-
273-8300.

   Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/WJG/
11/05/2010

/VIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2445